



भारतीय विमानपत्तन प्राधिकरण  
**AIRPORTS AUTHORITY OF INDIA**  
(Schedule – A Mini Ratna - Category – 1 Public Sector Enterprise)  
Eastern Region, NSCBI Airport, Kolkata-52

Syllabus & weightage for question for computer based online test (CBT)  
Advertisement No. ER/02/2024

**Syllabus for Sr Assistant (Electronics) Post Code-01.**

**Part-‘A’ (70% Weightage) 70 marks :**

**BASIC ELECTRICITY**

Electrostatics, Coulomb’s law, Electric field, Gauss theorem, Concept of potential difference; concept of capacitance and capacitors; ohm’s law, power and energy, Kirchoff’s voltage, current laws and their applications in simple DC circuits, Basic magnetism; Electromagnetic induction; Concept of alternating voltage & current; Cells and Batteries; Voltage and Current Sources; Thevenin’s theorem, Norton’s theorem and their applications.

**ELECTRONIC COMPONENTS & MATERIALS**

Materials: Conducting, Insulating and magnetic materials  
Components: Capacitors, Resistors, Transformers, Inductors and RF coils, surface mounted devices.

Relays and Switches: Various types of switches, Concept of ‘make’ and ‘break’ contacts in relays. Operating current, Holding current, Various types of relays. Their symbols, specifications and applications

**ELECTRONIC INSTRUMENTS & MEASUREMENT**

Specification of Instruments- accuracy, precision, sensitivity, resolution range, Errors in measurements and loading effect; principles of voltage, current and resistance measurements; Transducers, measurement of displacement & strain, power control devices and circuits. Working principles and operation of different electronic instruments (Analog as well s digital) viz Multi meter, Electronic voltmeter, AC milli volt meter, CRO, Signal generators, impedance bridges and Q-meters.

**ELECTRONIC DEVICES & CIRCUITS**

Multistage Transistor Amplifier, Transistor Audio Power Amplifiers, Feedbackin Amplifier, Sinusoidal Oscillators, Tuned Voltage Amplifiers, Opto Electronics Devices and Their Applications, Operational Amplifier, Wave shaping Circuits, Timer I.C, Multivibrator Circuits, Time Base Circuits, Integrated Electronics, Regulated Power supply, VCO (IC565) abd PLL (IC566)and their applications, THYRISTORS AND UJT.

## **DIGITAL ELECTRONICS**

Number System, Conversion from one system to another, Operations (addition, subtraction, multiplication and division), Logic Gates, Logic Simplification, Implementation of Boolean (logic) equations with gates, Karnaugh map (up to 4 variables) and simple application in developing combinational logic circuits, Logic Families, SSI, MSI, LSI, VLSI. TTL and MOS families & their sub classification. Codes and parity, Concept of code, weighted and non-weighted codes examples of 8421, BCD excess-3 and Grey code, Parity, Alphanumeric codes: ASCII & EBCDIC, Arithmetic circuits, Half adder & Full adder, Half & Full subtractor circuit, 4 bit adder/subtractor,

Decoders, Display Devices and Associated Circuits, Multiplexers and Demultiplexers, Latches and Flip Flops, Counters, Shift Register, MEMORIES, Basic RAM cell,  $N \times M$  bit AM. Expansion of word length and capacity, static and dynamic Ram, basic idea of ROM, PROM, EPROM and EEROM, A/D and D/A CONVERTERS, Dual slope and successive approximation types of ADCs.

## **INTRODUCTION TO MICROPROCESSORS**

Architecture of a Microprocessor (with reference to 8085 microprocessor, Concept of Bus, Bus organization of 8085, Pin details of 8085 and related signals, demultiplexing of Address/Data bus (AD0AD7). Generation of read write control signals. Memories and I/O interfacing. Programming (with respect of 8085 microprocessor), Instruction Timing and Cycles, Interrupts. Data transfer techniques, async data transfer, sync data transfer (hand shaking), interrupt driven data transfer, DMA, serial output data, serial input data.

## **NETWORK, FILTERS & TRANSMISSION LINES**

Two port network; Network solution methods: nodal and mesh analysis; Network theorems: superposition, Thevenin and Norton's, maximum power transfer; Wye Delta transformation; Attenuators; filters; transmission lines and their applications; characteristic impedance of line; concept of reflection and standing waves on a transmission line; Transmission Line equation; principles of impedance matching.

## **COMMUNICATION**

Modulation and Demodulation in communication systems. Amplitude Modulation, Frequency Modulation, Phase Modulation, Pulse Modulation, Coding, Digital Modulation Techniques: Amplitude shift keying (ASK): Interrupted continuous wave (ICW), two tone modulation, Frequency Shift keying (FSK), Phase shift keying (PSK)

Modems, Network and Control Considerations, Telemetry: radio-telemetry, and its application. Block diagram of TDM and FDM telemetry system, Radiopaging systems: concept and applications, Electronic Exchange, Operation of CELLULAR mobile telephone system. Concept of cells and frequency reuse, Facsimile (FAX), carrier Telephony.

Microwave Engineering: Microwave Devices, Wave guides, Microwave components, Microwave Antennas, Microwave Communication Systems- Block diagram & working principles of microwave communication link.

## **CONSUMER ELECTRONICS**

Audio Systems, Microphones, Loud Speakers, Sound Recording: principles, Digital sound recording, disc, CD Systems, Hi-Fi systems, pre-amplifiers, amplifiers, and Equalizers. Stereo Amplifiers, TV, Principles of Black and White and colour TV communications, scanning, composite video signal, VCR, Monochrome TV Communication, Elements of TV communication system, Colour TV Communication.

### **PART-B (30% Weightage) - 30 Marks**

**General Knowledge:** Questions may be designed to test the candidate's general awareness of the environment around him and its application to society. Questions may be designed to test knowledge of current events and of such matters of everyday observation and experience in their scientific aspect as may be expected of an educated person. The test will also include questions relating to India and its neighbouring countries especially pertaining to History, Culture, Geography, Economic Scene, General policy and scientific research.

**General Aptitude:** It may include questions on problems relating to Integers and Whole Numbers, LCM and HCF, Decimals and Fractions, Relationship between numbers, Fundamental Arithmetic Operations and BODMAS, Percentage, Ratio and Proportions, Work and Time, Direct and inverse Proportions, Averages, Simple Interest, Profit and Loss, Discount, Area and Perimeter of Basic Geometric Figures, Distance and Time, Square and Square roots etc.

**General Intelligence:** The questions may be broadly based on Alpha-Numeric Series, Coding and Decoding, Analogy, Following Directions, Similarities and Differences, Jumbling, Problem Solving and Analysis, Nonverbal Reasoning based on diagrams, age Calculations, Calendar and Clock, etc.

**English Language:** Spot the Error, Fill in the Blanks, Synonyms/ Homonyms, Antonyms, Spellings/ Detecting mis-spelt words, Idioms & Phrases, One word substitution, Improvement of Sentences, Active/ Passive Voice of Verbs, Conversion into Direct/ Indirect narration, Shuffling of Sentence parts, Shuffling of Sentences in a passage, Cloze Passage, Comprehension Passage.

## **Syllabus for Sr Assistant (Accounts) Post Code-02.**

### **Part- A (70 % Weightage) – 70 marks :**

- Trading and Profit & Loss Accounts and Balance Sheet.
- Bills of Exchange.
- Self Balancing ledgers and Sectional Balancing.
- Capital & Revenue, Receipt & Payments, Income & Expenditure Accounts.
- Depreciation, Reserve & Provisions.
- Branch and Departmental Accounts.
- Double Accounts System.
- Bank Reconciliation Statement.
- Rectification of Errors.
- Balance-Sheet formats & classification.
- Auditing and Income-Tax:
- Object of Audit.
- Vouching and Verification.
- Rights, Duties and Liabilities of Auditors.
- Income Tax Provisions Pertaining to income from salary and Provisions related to chapter-VI of Income Tax Act, 1961
- Provisions relating to TDS & forms to be filed with Income-Tax Department.
- GST

### **PART-B (30% Weightage) - 30 Marks**

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- **General Aptitude:** It may include questions on problems relating to Integers and Whole Numbers, LCM and HCF, Decimals and Fractions, Relationship between numbers, Fundamental Arithmetic Operations and BODMAS, Percentage, Ratio and Proportions, Work and Time, Direct and inverse Proportions, Averages, Simple

Interest, Profit and Loss, Discount, Area and Perimeter of Basic Geometric Figures, Distance and Time, Square and Square roots etc.

- **General Intelligence:** The questions may be broadly based on Alpha-Numeric Series, Coding and Decoding, Analogy, Following Directions, Similarities and Differences, Jumbling, Problem Solving and Analysis, Nonverbal Reasoning based on diagrams, age Calculations, Calendar and Clock, etc.
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## Syllabus for Sr Assistant (OL) Post Code-03.

### **Part- A (50 % Weightage) – 50 Marks : Syllabus Official Language:**

- अँग्रेजी से हिन्दी अनुवाद
  - हिन्दी से अँग्रेजी अनुवाद
  - किसी भी विषय पर हिन्दी में संक्षिप्त टिप्पणी लिखना
  - हिन्दी वाक्यों में रिक्त स्थानों की पूर्ति
  - हिन्दी मुहावरों व लोकोक्तियों के अर्थ
  - हिन्दी शब्दों के अँग्रेजी पर्याय
  - अँग्रेजी शब्दों के हिन्दी पर्याय
  - अँग्रेजी मुहावरों का सही अर्थ
  - अँग्रेजी शब्दों के अँग्रेजी पर्याय
- } subjective  
Questions.
- } Objective  
Questions

### **PART-B (50% Weightage) - 50 Marks**

**General Knowledge:** Questions may be designed to test the candidate's general awareness of the environment around him and its application to society. Questions may be designed to test knowledge of current events and of such matters of everyday observation and experience in their scientific aspect as may be expected of an educated person. The test will also include questions relating to India and its neighbouring countries especially pertaining to History, Culture, Geography, Economic Scene, General policy and scientific research.

**General Aptitude:** It may include questions on problems relating to Integers and Whole Numbers, LCM and HCF, Decimals and Fractions, Relationship between numbers, Fundamental Arithmetic Operations and BODMAS, Percentage, Ratio and Proportions, Work and Time, Direct and inverse Proportions, Averages, Simple Interest, Profit and Loss, Discount, Area and Perimeter of Basic Geometric Figures, Distance and Time, Square and Square roots etc.

**General Intelligence:** The questions may be broadly based on Alpha-Numeric Series, Coding and Decoding, Analogy, Following Directions, Similarities and Differences, Jumbling, Problem Solving and Analysis, Nonverbal Reasoning based on diagrams, age Calculations, Calendar and Clock, etc.

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